HISTORY OF PHYSICS IN THE CALTECH ARCHIVES, AND NOW ON THE WEB: HALE, GLASER, AND MORE

By Peter Sachs Collopy and Mariella Soprano, Caltech Archives

The Caltech Archives is digitizing two major collections in the history of physics and astronomy, consisting of the papers of solar astronomer George Ellery Hale (1868–1938) and particle physicist Donald A. Glaser (1926–2013). We are also contributing to the history of physics through new acquisitions of Caltech scientists' papers and a new exhibition on visual thinking in the work and life of Richard Feynman.

The Hale Papers, wrote Daniel Kevles in 1968, "is one of the richest sources for the history of science in the United States in the early twentieth century." In 1968, Caltech and the Carnegie Institution of Washington celebrated the centennial of Hale's birth by publishing this manuscript collection, edited by Kevles, on 100 reels of microfilm. Now, 50 years later, Caltech, the Carnegie Institution, and the Huntington Library are collaborating to scan this microfilm and publish the papers on the web. We plan to have them publicly available by Hale's 150th birthday, June 29, through our website and the Online Archive of California.

This collection extensively documents the development of astrophysics and its instrumentation, as well as the institutional histories of Mount Wilson Observatory, Palomar Observatory, the California Institute of Technology, the National Academy of Science, and the National Research Council. Hale corresponded not only with astronomers and physicists but with prominent scientists across the disciplines, so there's something in the collection for almost any historian of American science in his period. We're excited to make it more publicly accessible.

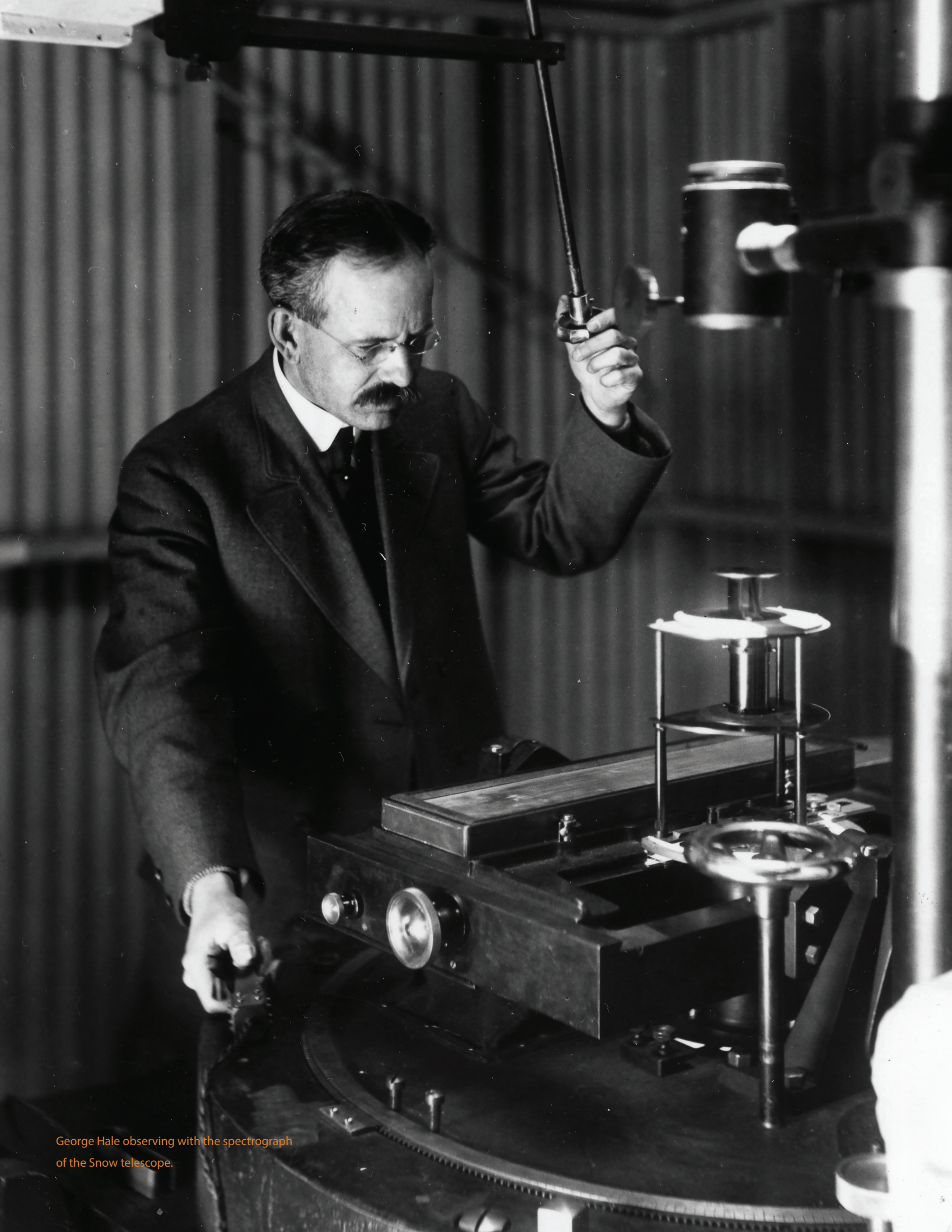
In addition, Caltech has recently collaborated with the University of California, Berkeley to publish the Glaser Papers at **http://glaser.library.caltech.edu**. Glaser opened new fields of both physics and biology by combining theory with engineering. In 1952, he invented the bubble chamber, which enabled physicists to observe the motion of exponentially more subatomic particles, and for which he received the Nobel Prize in 1960. Glaser then catalyzed the growth of molecular biology by devising several machines—with colorful names like Dumbwaiter and Cyclops—for automating experiments with microbial cultures, and by cofounding the first biotechnology company, Cetus, in 1971. From the 1980s into the 2000s, he turned his attention to visual neuroscience.

The Donald A. Glaser Digital Collection presents two physical collections of Glaser's documents, photographs, audio, video, and objects, owned by UC Berkeley and Caltech, respectively, as a single virtual collection, making Glaser's thoughts and insights more easily accessible.

Our major recent acquisitions at Caltech include the papers of physical chemist Ahmed Zewail (1946–2016), who received a Nobel Prize in 1999 for his contributions to femtochemistry, and experimental physicist Ronald Drever (1931–2017), a co-founder of the Laser Interferometer Gravitational-Wave Observatory, or LIGO, which detected gravitational waves in 2016, and for which Drever's co-founders were awarded the Nobel Prize after his death. We are grateful to AIP for financial support which will enable us to rapidly process the Drever Papers this year. (Funding was provided by the AIP Grants to Archives program.)

Finally, we are excited to mount an exhibition entitled "The Mind's Eye: Richard Feynman in Word and Image," on the occasion of the 100th anniversary of Feynman's birth on May 11. It will be located in the Beckman Room on the first floor of Caltech's Beckman Institute.

Please visit our website at **http://archives.caltech.edu** and our Twitter and Facebook feeds at @CaltechArchives for more news of the Caltech Archives.



George Hale observing with the spectrograph
of the Snow telescope.

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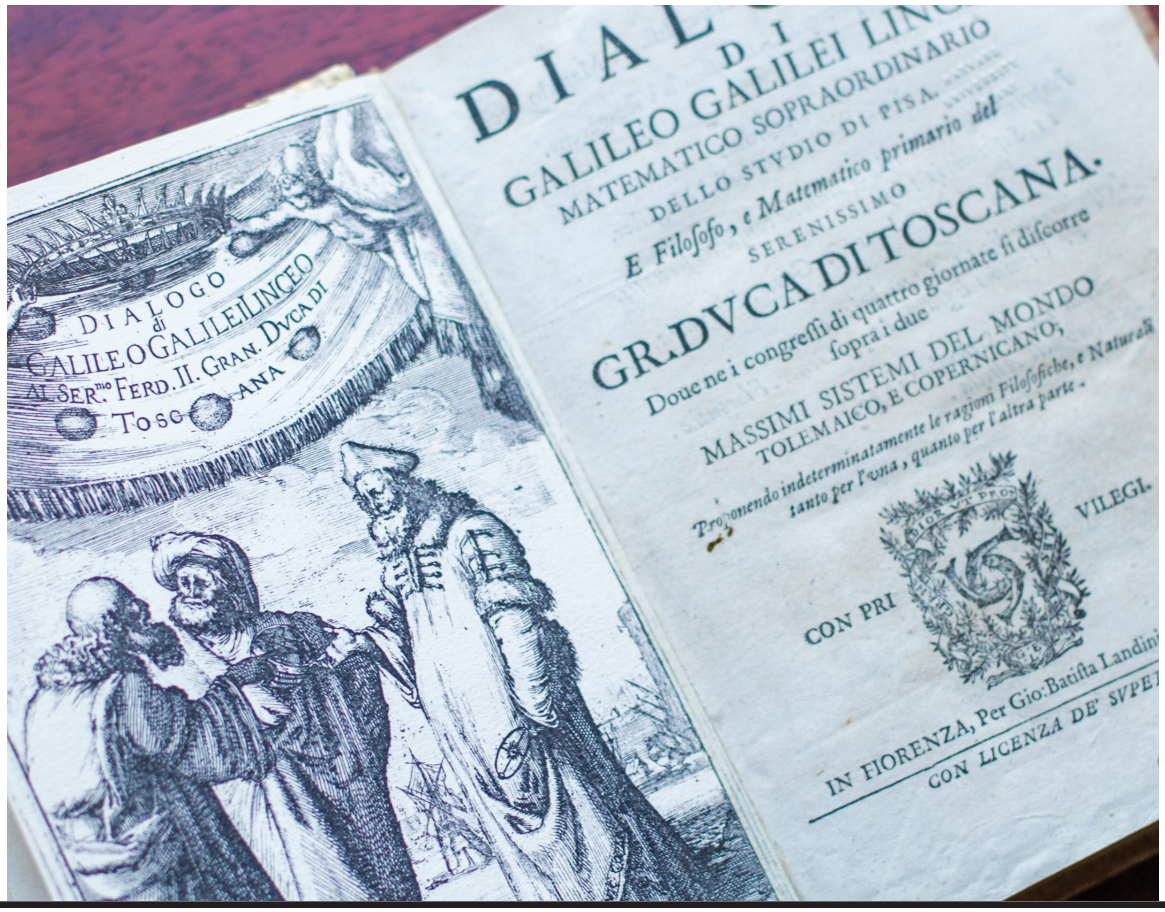

Together We Make History

More on the Physics Heritage & Promise Campaign on page 8

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ABOUT THE NEWSLETTER

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